ABSTRACT OF THE DISCLOSURE

A separator that is excellent in workability and corrosion resistance, and allows a reduction in the number of constituent components of a fuel cell and the number of manufacturing process steps, and a manufacturing method therefore are provided. A separator includes a separating section for achieving separation between a hydrogen gas channel and an oxygen gas channel, and a sealing section disposed along an outer periphery of the separator, for preventing leakage of hydrogen and oxygen gases. The separating section and the sealing section are formed integrally with each other by means of plastic deformation processing, e.g., press working, of a metal thin sheet. A coating layer is formed n the metal thin sheet to coat the metal thin sheet's surface, and a DC power generated at an interface between a high polymer membrane and a catalytic electrode on contact of the coating layer with the catalytic electrode is taken out as a DC current and is collected at a power collector plate after passing through an interior of the separator. A high polymer elastic layer is provided at the part contacting the high polymer membrane of a sealing projection of the sealing section. The polymer elastic layer contacts the polymer film to seal.